

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : The Files

DATE: 17 May 1957

FROM : 

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SUBJECT: Test of Ground Communication Equipment

1. On 30 April 1957 a test was conducted  of a TSS-developed VLF Ground Communications System. Two field units operating at 30 kc. were built by  and equipped with 200' long antenna leads and ground probes for transmission through the earth rather than via the atmosphere. The object of this arrangement was to provide a high degree of security against interception by ordinary techniques. No figures were available, however, on the above-ground radiation of the 30-watt field units. The purpose of the  test was to determine if there was any above-ground radiation from the equipment, the long antenna leads, or from the ground itself. In addition to Laboratory personnel, the following individuals participated in the test:

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2. The test was made from a point 500' from the R&D Lab Building to a house lot approximately 1 mile away and 500' lower in altitude. Contact was established immediately and reports of QRK5 QSA4/5 were exchanged. According to  the signals were stronger than should have been expected for the time of day (1400 EDT).

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3. A monitor station set up at the Lab building, and using an HRO and a conventional antenna 100' long, had no difficulty hearing both ends of the circuit QRK5 QSA5. The strength of the above-ground radiation discouraged further experimentation since the system obviously possessed little or no inherent security.

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4.  reported the results of this test to  on a visit  10 May. The company was at a loss to explain the excessive radiation and suggested using buried coaxial cable for the ground probe leads.  offered to continue testing of



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the system "as a sideline" on its expedition  this summer. No indication of interest was made, however, by 

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6. The equipment and associated reports and literature is being held by EP pending disposition instructions from TSS.

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